

SHOPPING BEHAVIOR ANALYSIS OF INTERNATIONAL STUDENTS IN U.S. COLLEGES

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ABSTRACT

We analyze the relationship between study time and shopping behavior of international students enrolled at colleges in the United States (U.S.). We distinguish between Utilitarian and Hedonic shopping and use stepwise and other regression analysis to reach our conclusions. We also include gender, age, and other variables in our analysis.

KEYWORDS: *Utilitarian Hopping Behavior, Hedonic Shopping Behavior, Study Time, International Students & Stepwise Regression*

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INTRODUCTION

Total U.S. back-to-college expenditure on personal items reached 83.6 billion USD in 2017 (Smith, 2017). Generation Y (those born between 1977 and 1994) is now estimated to be the largest consumer group in U.S. history. These data revealed a clearly defined segment—college students—who have significant purchasing power. At the same time, the number of international students in U.S. colleges and universities grew by 7.1% in the 2015-2016 academic year over the previous academic year, topping one million in the 2015-16 academic-year (John, 2016). Chinese students accounted for 31.5% (328,547) of all international enrollments (1,043,839) in the U.S., according to the Institute of International Education (IIE). China is followed by India (165,918), Saudi Arabia (61,287), South Korea (61,007) and Canada (26,973).

International students in U.S. colleges have diverse shopping behavior. They represent a significant part of wealthy consumers and will be an important segment of all businesses which target college students. Students might have different shopping behavior based on how much time they spend studying. We examine whether study behavior is related to different shopping patterns among international students. Previous research on international college students' shopping behavior has not explored a relationship between study time and shopping tendency. This study examines on whether or not students who spend “more” hours studying have different shopping behavior than students who study “fewer” hours.

College students have a higher than average level of education. Thus, they supposedly make more “rational” purchases. We also examine whether students who spend more time studying also have a higher tendency of being more utilitarian than students who spend less time studying.

LITERATURE REVIEW

Utilitarian and Hedonic Shopping Behavior

Babin (1994) defines Utilitarian Motivation as resulting from some type of conscious pursuit of an

intended consequence. In contrast, they define Hedonic Motivation as resulting from arousal, heightened involvement, fantasy and escapism. Furthermore, “Utilitarian consumer behavior” has been described as practical, task related, and rational (Batra & Ahtola, 1991). On the other hand, “Hedonic consumer behavior” refers to multi-sensory images and emotional arousal in using products (Hirschman & Holbrook, 1982). In his research, Asraar-Ahmed examined if there is a gender difference between Utilitarian and Hedonic in college students (Asraar Ahmed, 2015). Over by and Lee (2006) examined the effect of Utilitarian motivation and Hedonic motivation values on consumer preferences for online shopping; their results showed that during online shopping, Utilitarian Motivation values were considered as more important than Hedonic Motivation values. However, none of the research addressed which specific factors impact college students’ Utilitarian motivation and Hedonic motivation.

The article, *Back to School Shopping* (Mintel Group Ltd, 2017), illustrated several factors that affect college students’ shopping patterns. For example, less-affluent students spend less on supplies and electronics than more affluent students; of course, this is not a surprising result. The article also presented information on college students’ shopping behavior and analyzed it based on age groups. The article did not include *study behavior* as a factor that might correlate with shopping patterns. Results from the study “Performance of College Students: Impact of Study Time and Study Habits” (Nonis & Hudson, 2010) suggest that the quantity of time spent studying has an influence on academic performance – again, hardly a surprising result. Our analysis evaluates how study time relates to students’ shopping patterns. Most research on college student shopping examines the factors: online shopping and gender differences. Research has rarely, if at all, related shopping behavior to study behavior. It is useful to consider this relationship, because it potentially helps companies to better identify and target customers and plan more effective marketing campaigns.

METHODOLOGY

Our study aims to find out the relationship between shopping behaviors (independent variables) and amount of time studying (dependent variable). We created a questionnaire survey called “*College Students’ Back to School Purchasing*.” We collected responses from several colleges’ international student organizations and associations. They distributed the questionnaire on their social network group chats. In 2017, November 15th to Dec 1st, the survey was distributed to over one thousand people, with approximately a 10 percent response rate; we acquired 139 usable responses. The questionnaire included 11 shopping behavior questions, and other questions, that potentially indicate variables’ relationship to study time. The questionnaire is shown in Exhibit 1.

Since we were interested in the relationship between shopping pattern and study time among international college students in the U.S., we designed several interval-scale questions targeting a student’s time allocation on both shopping and studying, interests in various products, and the amount of time they spent on both online shopping and physical-store shopping. We also considered the relationship between different age and gender levels and college students’ study time.

The questionnaire was divided into three parts: one part consisted of respondents’ background details, including occupation, shopping budget, study time, gender and age. We suspected that the factors: occupation (currently a college student or not) and age may affect study time, and the factors: gender and shopping budget may affect the shopping behaviors. A second part consists of 11 shopping categories related to consumption structure, such as consumption on Traveling, Clothing, Delivery Food and School Supplies, again with interval- scale questions. The frequency for each particular shopping category is based on a 5 point scale: 1 = Least often, 2 = Not often, 3 = Neutral, 4 = Often and 5 = Very often. A third part of the questionnaire consists of some statements related to Shopping Time Preference, primarily

when, and how long, does a student shop online or offline. We suspected that quantity of Shopping Time, and Study Hours, are negatively correlated; the scale is the same for study time and shopping time: 1 = Less than 2 hours, 2 = 2 to 4 hours, 3 = 4+ to 7 hours, 4 = 7+ to 11 hours, 5 = More than 11 hours.

We decided to use SPSS and step wise-regression analysis to determine the most relevant variables, to test against our hypotheses;

- Students who tend to spend more time on utilitarian shopping(e.g., for school supplies and food related items) put in more hours studying than students who tend to spend more time hedonic shopping (e.g., clothes, entertainment items).
- “Age” is significantly positively related to the “amount of study time.”

Sample Description

The frequencies of the response data from the questionnaire were as follows¹:

1.) Are you Currently a College Student?

College Student?	Percent
Yes	90
No	10

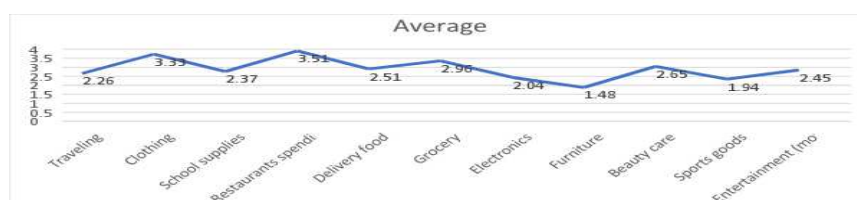
2.) On Average, How many Hours do you Spend Studying Per Week?

Hours	Percent
Less than 2	9
2 - 4	10
4+ - 7	16
7+ - 11	16
More than 11	50

3.) On Average in this Semester, How much Money do you spend for Shopping each Month?

US Dollars	Percent
Less than 500	47
501 - 1000	31
1001 - 1500	8
1501 - 2000	8
Greater than 2000	6

4.) On a Scale of 1 (Least often) to 5 (most often), Please Rank How Often You Shop in the following Shopping Categories



¹Response percents may add to a value slightly different from 100, due to rounding.

Product Type	1	2	3	4	5	Average
Traveling	44	47	25	14	9	2.26
Clothing	8	33	31	39	28	3.33
School supplies	45	35	29	23	7	2.37
Restaurants spending	8	16	40	47	28	3.51
Delivery food	50	22	27	26	14	2.51
Grocery	21	35	33	28	22	2.96
Electronics	55	47	20	11	6	2.04
Furniture	100	20	13	3	3	1.48
Beauty care	42	27	24	29	17	2.65
Sports goods	66	36	21	12	4	1.94
Entertainment (movie etc.)	42	30	37	22	8	2.45

5.) On Average how Much Time do you Spend on Online Shopping Per Week?

Hours	Percent
Less than 2	30
2 - 4	45
4+ - 7	18
7+ - 11	6
More than 11	1

6.) On Average How Much Time do You Spend on Shopping at Physical Stores/Malls Per Week?

Hours	Percent
Less than 2	55
2 - 4	31
4+ - 7	11
7+ - 11	1
More than 11	2

7.) Please Indicate How Much You Agree or Disagree With Each Statement

(1-5 scale, 1 = hardly ever, 5 = most always)?

AVERAGE

I Shop during Weekends	I Shop during the Holiday Season
3.25	3.55

8.) Gender

Gender	Percent
Male	40
Female	58
Other	2

9.) Age

Age (Full Years)	Percent
Less than or equal to 18	1
19-20	7
21-22	44
23-24	34
25 or above	14

ANALYSIS AND DISCUSSION OF RESULTS

We dropped from the data set those who were not college students – indicated by the response to Q1. This left a sample size of 125 (from the original 139.) Our initial analysis used stepwise-regression analysis to examine the relationship between the time spent studying and shopping preference and patterns. We set Q2, Study time, as “Y,” the dependent variable, and Q3 through Q9 as independent variables; this led us to have 18 independent variables, Q3, the 11 variables of Q4, Q5, Q6, the 2 variables of Q7, as well as Q8 and Q9 (see Exhibit 1).

The result of our stepwise regression had 4 variables enter (and stay) in the final stepwise model. For the model summary, see Table 1.

Table 1: Stepwise Regression Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.271 ^a	.074	.066	1.239
2	.321 ^b	.103	.088	1.224
3	.383 ^c	.146	.125	1.199
4	.425 ^d	.181	.154	1.179
a. Predictors: (Constant), Q4_A8				
b. Predictors: (Constant), Q4_A8, Q4_A11				
c. Predictors: (Constant), Q4_A8, Q4_A11, Q4_A3				
d. Predictors: (Constant), Q4_A8, Q4_A11, Q4_A3, Q5				

We can see from Table 1 that the four variables are estimated to explain about 15%-18% of the variability in study time (i.e., R-square = 18.1%, adjusted R-square = 15.4%).

The Coefficients table is presented in Table 2.

Table 2: Stepwise Regression Coefficients Table-6

Model		Un standardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.530	.216		21.010	.000
	Q4_A8	-.393	.126	-.271	-3.126	.002
2	(Constant)	4.858	.269		18.088	.000
	Q4_A8	-.312	.130	-.216	-2.393	.018
	Q4_A11	-.190	.095	-.181	-2.004	.047
3	(Constant)	4.608	.282		16.356	.000
	Q4_A8	-.405	.133	-.280	-3.043	.003
	Q4_A11	-.269	.098	-.256	-2.741	.007
	Q4_A3	.245	.099	.237	2.478	.015
4	(Constant)	4.208	.330		12.769	.000
	Q4_A8	-.416	.131	-.287	-3.171	.002
	Q4_A11	-.309	.098	-.294	-3.147	.002
	Q4_A3	.235	.098	.227	2.411	.017
	Q5	.260	.116	.191	2.245	.027

From Table 2, we see that our final model equation, with dependent variable, Study time (Q2) is

$$\text{Q2- predicted} = 4.208 - .416 * \text{Q4_A8} - .309 * \text{Q4_A11} + .235 * \text{Q4_A3} + .260 * \text{Q5}$$

So, we can note that predicted study time *decreases* with the amount of time a student spends shopping for

Furniture and Entertainment, while predicted study time increases with the amount of shopping time spent on School supplies and shopping time spent on Online shopping. Each statement just made about an individual independent variable assumes all others variables in the model held constant. One could argue that shopping for Furniture and Entertainment are more in the direction of Hedonic shopping (although it is very clear for Entertainment, it is not so clear for Furniture), and that type of shopping correlates negatively with study time, while shopping for School supplies is more in the direction of Utilitarian shopping, which correlates negatively with study time. The increase in study time as a function of time spent on online shopping can be viewed in two ways – one can make the case that more time spent on online shopping is more time NOT spent studying (and, hence, the sign of the coefficient does not fully make sense). However, one can also make the case that more time spent on online shopping may indicate less time spent on *offline* shopping, which is more time consuming, and therefore, MORE time is available for studying (so that the sign of the coefficient makes good sense).

If, in fact, we do view furniture shopping as leaning toward the Hedonic type of shopping (again, not so clear – shopping for a common type of bed or a plain kitchen table is clearly Utilitarian, while shopping for fancy bar stools or a water bed, or a billiards table is more toward Hedonic shopping), we can argue that we have support for hypothesis one. More time spent on Hedonic shopping is associated with less study time, while more time spent on Utilitarian shopping is associated with more study time. If we focus only on the 11 types of shopping, and run a multiple regression with these 11 independent variables, thus isolating Shopping Times (Q4), and eliminating any effects that are entered via Q5 or any other independent variable, we find the results shown in Table 3.

In essence, the results closely duplicate what was found in the stepwise-regression results. The only significant variables are the same Q4_A11 ($p < .05$), Q4_A8 ($p < .05$), and Q4_A3 ($p = .078$), with the same respective signs of the coefficients. The coefficient values are quite similar:

Stepwise-regression coefficient	Multiple-regression coefficient
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Q4_A11	-.309	-.263
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Q4_A8	-.416	-.356
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Q4_A3	+.235	+.195
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In each case, the multiple-regression coefficient is between 82% and 86% of the stepwise-regression coefficient.

To examine the validity of hypothesis 2, we ran a simple regression with $Y = Q2 = \text{Study time}$, and $X = Q9, \text{Age}$. From Exhibit 1, we can see that AGE is coded as in the table below:

Less than 18	1
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19-20	2
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21-22	3
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23-24	4
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25 and above	5
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This is assumed to be “close enough” to a linear representation, especially with 85% of the respondents in the middle 3 categories. The regression results are in Table 4

Table 3: Multiple Regression Coefficients

Coefficients						
Model		Un Standardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.670	.488		9.568	.000
	q4_7	.055	.128	.047	.426	.671
	q4_9	-.047	.097	-.051	-.489	.626
	q4_11	-.263	.111	-.247	-2.371	.019
	q4_10	-.066	.128	-.055	-.517	.606
	q4_8	-.356	.174	-.237	-2.050	.043
	q4_5	.068	.090	.075	.761	.448
	q4_6	-.078	.095	-.081	-.829	.409
	Q4_1	-.166	.110	-.145	-1.510	.134
	q4_4	.130	.123	.111	1.058	.292
	q4_3	.195	.109	.183	1.782	.078
	Q4_2	.021	.113	.019	.185	.853

Table 4: Results of Simple Regression between Q2 and Q9

Coefficients ^a						
Model		Un standardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.435	.605		5.681	.000
	Q9	.116	.133	.078	.871	.385

a. Dependent Variable: Q2

It is clear from Table 4 that we fail to reject the null hypothesis of no linear relationship between Q2 and Q9. Thus, hypothesis 2 is not confirmed. Still, we can say that the results are *directionally correct*, in that the coefficient is positive, indicating, but with insufficient confidence to be significant, that increased age corresponds with increased study time.

CONCLUSIONS

This study explored the relationship between study hours and shopping behavior among international students. The results indicated, *for the most part*, as hypothesized, that more time spent on Hedonic shopping is associated with less study time, while more time spent on Utilitarian shopping is associated with more time studying. Our second hypothesis, that age would be significantly and positively related to the amount of study time was not confirmed, while being directionally correct.

LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

Our research has several limitations such as potential regional differences. Although we conducted this survey online, most of the respondents are from one university. The majority of respondents are international students in the New England region, as opposed to the entire country. Due to regional differences within the United States in consumption, price, and income, this research can be more generalized by extending it to the rest of the United States.

As noted earlier, responders are primarily from a community social-media network. This group of students prefers to spend more time with online communication (separate from shopping time), which can lead to less time allocated to study time. Also, we have a limited sample size, with a sample size of 125 qualified for our analysis. And, this sample of

respondents may suffer from the very frequent possibility of non-response bias; we did not perform any follow up procedures to examine the issue of whether those who chose to respond have different responses from the many who did not choose to respond.

We also have a limited set of independent variables – limited in the sense that, while 18 (the number of independent variables in our stepwise regression analysis) is not a “small” number of variables, the 18 variables explain less than 20% of the variability in study time. It might be useful to consider what other variables are obtainable which could increase the explanatory power of our regression models.

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EXHIBIT 1

College Students Back to School Purchasing Behavior Questionnaire

1. Are you currently a college student?

- Yes
- No

2. On average, how many hours do you spend on studying per week?

- Less than 2 hours
- 2 to 4 hours

- 4+ to 7 hours
- 7+ to 11 hours
- More than 11 hours

3. On average in this Semester, How Much Money Do You Spend for Shopping Each Month?

- less than \$500
- \$501 - \$1000
- \$1001 - \$1500
- \$1501 - \$2000
- more than \$2000

4. On a scale of 1 (least often) to 5 (most often), please rank how often you shop in the following shopping categories.

- A1) Traveling 1 2 3 4 5
- A2) Clothing 1 2 3 4 5
- A3) School supplies 1 2 3 4 5
- A4) Restaurants spending 1 2 3 4 5
- A5) Delivery food 1 2 3 4 5
- A6) Grocery 1 2 3 4 5
- A7) Electronics 1 2 3 4 5
- A8) Furniture 1 2 3 4 5
- A9) Beauty care 1 2 3 4 5
- A10) Sports goods 1 2 3 4 5
- A11) Entertainment (movie, etc.) 1 2 3 4 5

5. On Average How Much Time You Spend on Online Shopping Per Week?

- Less than 2 hours
- 2 to 4 hours
- 4+ to 7 hours
- 7+ to 11 hours
- More than 11 hours

6. On Average How Much Time You Spend on Shopping at Physical Stores / Malls Per Week?

- Less than 2 hours
- 2 to 4 hours
- 4+ to 7 hours
- 7+ to 11 hours
- More than 11 hours

7. Please Indicate How Much You Agree Or Disagree With Each Statement (1=Less Agree, 5 = More Agree):

- I shop mostly during weekends. 1 2 3 4 5
- I shop mostly during holiday seasons 1 2 3 4 5

8. Gender

Male Female Other

9. In Which of the Age Group (Full Years Completed) Do You Belong To?

- Under 18
- 19-20
- 21-22
- 23-24
- 25 and Above